

VINTAGE WINGS OF CANADA

NORTH AMERICAN AVIATION

HARVARD MARK 4

COMPILED BY VWC HISTORIAN DON MACNEIL



INTRODUCTION

Harvards are perhaps the most recognized military training aircraft in the world. With its trainer yellow paint scheme and unique sound caused by the roar of its Pratt & Whitney radial engine with propeller blade tips moving at close to the speed of sound, Harvards were a familiar sight and sound at military training airfields across Canada between 1940 and 1955.



They were originally designed to meet a 1934 U.S. Army Air Force (USAAF) specification for an advanced trainer (AT) which would fill the gap between the basic training aircraft on which fledgling pilots earned their wings and the higher performance fighter aircraft that they would fly in combat. A design by Lee Atwood of General Aviation (Later to become North American Aviation) won the contract and the aircraft became known as the AT-6 "Texan".

This design also met similar Canadian military requirements. North American licensed Noordyn of Montreal to build the Harvard Mark IIB version for the Royal Canadian Air Force (RCAF), the Royal Air Force and the USAAF Canada Car & Foundry was later licensed to build the Mark 4 at Fort William, ON, Canada.

Once a pilot soloed on a primary trainer such as the Tiger Moth, they would then move on to Harvards to acquire aerobatics and handling skills in this higher performance aircraft. The Harvard could also be configured with machine guns, rockets or practice bombs to round out the skills needed to fly fighter aircraft such as the Spitfire or Mustang in combat.

The Harvard is a pleasant aircraft to fly but has enough vices to make it challenging for student pilots. It is also a rugged and reliable aircraft designed to take the punishment received at the hands of inexperienced pilots. Nearly all American and British Commonwealth pilots during the Second World War received some training on Harvards. Approximately 11,000 Canadian and 8,000 Allied airmen received pilot training on Harvards in Canada through the British Commonwealth Air Training Plan (BCATP). After the Second World War, Harvards were used by the RCAF to train military pilots of North Atlantic Treaty Organization (NATO) member countries as part of Canada's NATO commitment. Once Harvards were declared surplus to military needs, many ex-military and experienced civilian pilots purchased Harvards for personal use. Harvards are a common sight at most major air shows throughout the world today. Canada has built 2,557 Harvards, more than any other aircraft type.

Harvard Origins

North American Aviation, a long-term USA aircraft manufacturer of many famous aircraft including the Space Shuttle, designed this fixed wing military trainer. In the USA it is known as the AT-6 or T-6 "Texan" and the SNJ for the U.S. Navy version. In British Commonwealth air forces it is known as the Harvard. It is known by a number of other designations depending on the country operating the aircraft and the model.



Dimensions:	Imperial	Metric
Wing Span:	42 ft	12.8 m
Fuselage Length:	28 ft 11 in	8.8 m
Height:	11 ft 8 1/2 in	3.5 m
Wing Area :	253.7 sq ft	23.57 sq m

Weight:		
Empty:	3,995 lb	1,812 kg
Fully Loaded:	5,235 lb	2,375 kg

Performance:		
Maximum Speed:	258 mph	415 km/h
Cruising Speed:	161 mph	259 km/h
Landing Speed:	97 mph	156 km/h
Range:	750 mi	1,207 km
Max Climb:	1,300 ft/min	396 m/min
Max Altitude:	22,000 ft	6,710 m



Origins of Harvard Mark 4

The Vintage Wings Harvard is one of 270 Mark 4s, the last model to be built. This aircraft was manufactured 17 December 1952 by Canadian Car and Foundry Ltd. in Fort William, ON and assigned construction number CCF4-242.

It was taken on strength by the RCAF in December of 1952 and assigned service number 20451. The aircraft was initially based at Centralia Ontario where it was used to train NATO pilots. In October 1956 it was flown at Rockcliffe Airport in Ottawa, Ontario.

In May of 1960, 20451 was transferred to RCAF Station Moose Jaw where it was used for flight training.

The aircraft was involved in a category B accident 12 January 1965. It was declared surplus to RCAF needs and struck from RCAF strength 23 June 1965. It was sold to Forhart & Daniel of Avondale, Arizona, and dismantled.

Circa 1978 it was discovered in a compound at Mesa, AZ. It was then acquired by Rick Shanholtzer of McKinney, TX in 1993 and stored dismantled.

In 1993 it was sold to Roaero Ltd. / Hannu Halminen, where it was restored and registered as CF-ROA (7 July 1994). The first post-restoration flight occurred 7 July 1994. It remained at Roaero Ltd. until 2000 when sold to Classic Wings Inc. on 29 August 2000.

The aircraft was acquired by Mr. M. Potter 13 April 2000 and added to the Vintage Wings collection.

Mark 4 Design and Specifications

The Harvard is a monoplane with flush riveting. It has dual cockpits and retractable landing gear.

Wings – cantilever, low-wing, all metal stressed-skin;

Fuselage – all metal, stressed-skin;

Landing Gear – inward folding, retractable type;

Power Plant – Pratt & Whitney R 1340-AN-1; 600 hp (kw) at 2,300 rpm;

Propeller – Hamilton Standard variable pitch, two blade propeller;

Accommodation – enclosed cabin to accommodate pilot and student or passenger;

Manufacturer: Canadian Car & Foundry Ltd. under license from North American Aircraft;

Armament: Provision for machine guns, rockets and practise bombs;

Original Cost: \$27,000 US.



Photo: Eric Dumigan